COMMODORE ULTIMAX TECHNICAL OVERVIEW

FEATURES

6510   MICROPROCESSOR: 6502 COMPATIBLE

6566 VIDEO DISPLAY CHIP:
* 320 X 200 PIXEL RESOLUTION
* 16 COLORS AVAILABLE SIMULTANEOUSLY
* INDEPENDENTLY MOVEABLE DISPLAY OBJECTS
  - EACH OBJECT IS 24 X 21 PIXELS
  - COLLISION DETECTION BETWEEN OBJECTS
  - SELECTABLE OBJECT DISPLAY PRIORITY
  - MULTICOLOR OBJECTS
* HORIZONTAL OR VERTICAL SCROLLING BY PIXEL

6581   SID SOUND SYNTHESIZER CHIP
* 3 INDEPENDENT VOICES, EACH WITH:
  - 9 OCTAVE RANGE (.059Hz-3.9KHz IN .059Hz STEPS)
  - 4 WAVEFORMS: SAWTOOTH, TRIANGLE, VARIABLE PULSE, NOISE
  - PROGRAMMABLE ADSR ENVELOPE GENERATOR
* PROGRAMMABLE FILTER
  - LOW PASS, HIGH PASS, BAND PASS, AND NOTCH OUTPUTS
  - VARIABLE RESONANCE
* MASTER VOLUME CONTROL

DESIGN FEATURES:

KEYBOARD:
        - FLAT MEMBRANE KEYBOARD(VIC 20 LAYOUT)
GAME CONTROLLERS:
        - JOYSTICKS(1 OR 2)
        - PADDLES(2 OR 4)
        - LIGHT PEN
PLUG-IN CARTRIDGE:
        - CARTRIDGES CAN ALSO BE RUN ON COMMODORE 64
I/O SYSTEMS:
        - CBM CASSETTE INTERFACE
        - 44 PIN EXPANSION BUS/CARTRIDGE SLOT
        - RF MODULATOR WITH SOUND FOR TV HOOKUP
        - 75 OHM COMPOSITE VIDEO OUTPUT FOR MONITOR
        - AUDIO OUTPUT FROM SYNTHESIZER
MEMORY CONFIGURATION:
        - 1K SCREEN RAM
        - 1K USER RAM(INCLUDING STACK)
        - 2K RAM EXPANSION
        - 1K COLOR RAM(NIBBLES)
ACCESSORIES:
        - BASIC LANGUAGE CARTRIDGE
        - PLUG-IN GAME AND APPLICATION CARTRIDGES
        - JOYSTICKS
        - PADDLES
        - LIGHT PEN
        - CASSETTE UNIT

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               COMMODORE ULTIMAX FUNCTIONAL DIAGRAM:

LOCATION              CONTENTS                          PURPOSE

            [------------------------------------]   -------------------
$F800-FFFF  [                                    ]   ALL CHAR & SPRITE
            [-8K CARTRIDGE ROM AREA 1            ]   DATA MUST GO HERE
$F000-F7FF  [                                    ]
            [-                                   ]   -------------------
$E800-EFFF  [                                    ]
            [-                                   ]
$E000-EFFF  [                                    ]
            [------------------------------------]   -------------------
$DC00-DFFF  [  I/O (6526)                        ]   KEYBOARD/JOYSTICKS/L.PEN
            [------------------------------------]   -------------------
$D800-DBFF  [  COLOR RAM (1K NIBBLES)            ]
            [------------------------------------]   -------------------
$D400-D7FF  [  SOUND CHIP (6581)                 ]   ALSO PADDLES
            [------------------------------------]   -------------------
$D000-D3FF  [  VIDEO CHIP (6566)                 ]
            [------------------------------------]   -

            $A000-CFFF IS UNUSED

            [------------------------------------]   -
$9800-9FFF  [                                    ]
            [-8K CARTRIDGE ROM AREA 2            ]
$9000-97FF  [                                    ]
            [-                                   ]
$8800-8FFF  [                                    ]
            [-                                   ]
$8000-87FF  [                                    ]
            [------------------------------------]

            $4000-7FFF IS UNUSED

            [------------------------------------]   -
            [                                    ]
$3000-3FFF  [  SHADOW OF $F000 BLOCK             ]
            [                                    ]
            [------------------------------------]   -

            $1000-2FFF IS UNUSED

            [------------------------------------]   -------------------
$0C00-FFFF  [                                    ]   2K RAM
            [                                    ]   EXPANSION
$0800-0BFF  [                                    ]   AREA
            [------------------------------------]   -------------------
$0400-07FF  [  SCREEN/SPRITE POINTERS            ]
            [------------------------------------]   2K RAM
$0000-03FF  [  Z-PAGE/STACK/DATA (512B)          ]
            [------------------------------------]
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NOTE:

    THERE IS NO ROM IN THIS UNIT, THEREFORE ALL CHARACTER DATA MUST
COME FROM THE CARTRIDGE.
    THE 6510 VECTOR INFORMATION (IRQ/RES/NMI) WILL BE TAKEN FROM THE
TOP OF CARTRIDGE ROM #1.

this document was generously contributed by

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